

REMARKS/ARGUMENTS

Favorable reconsideration of this application is respectfully requested.

Claims 1-21 are pending in the present application. Claims 1-12 have been amended to better conform with accepted U.S. claim practice and to more clearly define the hunting detector in light of the description of steps S40 to S80 of Figure 3, for example. The specification has been amended to correct obvious typographical errors and to clarify the description of detecting "hunting." All amendments have been made without the introduction of any new matter.

The outstanding Official Action presented a rejection of Claims 1-12 as being anticipated by Nishida et al. (U.S. PG Pub. No. 20010027907 A1, Nishida '907) under 35 U.S.C. §102(e).

As an initial matter, Applicants acknowledge with appreciation the allowance of Claims 13-21.

Before considering the rejection of Claims 1-12 as being anticipated by Nishida '907, it is believed that a brief review of the invention defined by independent Claims 1 and 9 would be helpful. In this regard, independent Claims 1 and 9 are directed to a hunting device and method that first determines whether there is a current through an electrical load and then detects a hunting condition by counting each time the current through the electrical load that has been determined to be present is further determined to drop below a predetermined low level within a predetermined period of time.

Amended independent Claim 1 recites a hunting detecting device with at least:

a current determining device configured to determine whether there is a current through the electrical load; and

a hunting detector configured to count each time when the current through the electrical load determined to be present by the current determining device drops below a predetermined low level within a predetermined period of time as a hunting condition.

Independent Claim 9 includes similar method steps.

Turning to Nishida '907, it is respectfully submitted that this reference does not teach or suggest this amended independent Claim 1 structure or the similar steps of amended independent Claim 9 relative to the indicated paragraphs ([0005], [0009-0015], and [0066-0071] at pages 1 and 6 of Nishida '907, or elsewhere.

In this regard, paragraph [0005] simply indicates that it is known to control the engagement force of an electromagnetic clutch by calculating a required amount of current needed and detecting an actual amount of current flowing through the clutch coil. As further stated at the end of paragraph [0005], "the value of a duty factor of current supplied to the coil is feedback-controlled such that the actual current amount becomes equal to the desired current amount."

While this teaching of detecting the actual amount of current flowing through the clutch coil might be said to inherently teach the claimed apparatus and step that determines "whether there is a current through the electrical load." However, it has nothing to do with the further claimed requirement that there be a count of "each time when the current through the electrical load determined to be present by the current determining device drops below a predetermined low level within a predetermined period of time," much less that this specifically recited current event being counted as occurring in the specifically recited "predetermined period of time" be interpreted "as a hunting condition."

Paragraphs [0009] – [0013] of Nishida '907 indicate that:

[0009] The apparatus according to the invention is characterized by comprising:

[0010] storage means for storing a predetermined reference control value defining a standard for the output control value, the predetermined reference control value having a standard relationship with respect to the amount of current;

[0011] actual current amount detection means for detecting the actual amount of current;

[0012] comparison means for comparing the calculated output control value with the predetermined reference control value corresponding to the detected actual amount of current; and

[0013] failure determination means for determining based on a result of the comparison by the comparison means whether or not the electromagnetic clutch has failed due to a change in a resistance value of the coil of the solenoid thereof.

Clearly, nothing in the above-noted Nishida '907 storage means, actual current amount detection means, comparison means, and/or failure determination means of paragraphs [0010]-[0013] teaches or suggests the above-noted claim requirement that there be a count of "each time when the current through the electrical load determined to be present by the current determining device drops below a predetermined low level within a predetermined period of time," much less that this specifically recited current event being counted as occurring in the specifically recited "predetermined period of time" be interpreted "as a hunting condition."

Paragraph [0014] also fails to contain any such teachings or suggestion as this paragraph simply reiterates these above-noted "means" of paragraphs [0010]-[0013] as follows:

[0014] According to this apparatus, the predetermined reference control value as the standard of the output control value, which has a standard relationship with respect to the amount of current flowing through the coil of the solenoid, is stored in the storage means. Further, the output control value for control of the amount of current supplied to the coil is calculated by feedback control such that the actual amount of current detected by the actual current amount detection means becomes equal to the desired amount of current. Then, the comparison means compares the calculated output control value with the predetermined reference control value corresponding to the detected actual amount of current. The failure determination means determines based on a result of the comparison whether or not the electromagnetic clutch has failed due to a change in the resistance value of the coil.

Paragraph [0015] also fails to provide any such teachings or suggestions of the above-noted required current event counting within a specified time period as it merely summarizes the above-noted operations as follows:

[0015] As the resistance value of the coil is changed, the output control value (duty factor value of pulse current, for instance) mentioned above is calculated by feedback control such that it varies with and compensates for the change in the resistance value of the coil to thereby cause the actual amount of current to become equal to the desired amount of current. Therefore, the difference between the calculated output control value and the predetermined (standard) reference control value corresponding to the detected actual amount of current reflects a degree of the change in the resistance value of the coil. Hence, by comparing the output control value with the predetermined reference control value, it is possible to properly determine whether or not the electromagnetic clutch has failed due to a change in the resistance value of the coil.

Turning to page 6 and paragraph [0066] of Nishida '907, this paragraph is not seen to be relevant as the comparison here indicates a normal coil and there is no failure determination based on a result of the comparison.

Paragraph [0067] of Nishida '907 at least involve a situation in which the result of the comparison indicates "that a failure of the coil 42 of the electromagnetic clutch 10 has occurred on the increased resistance-side," where paragraph [0068] then discloses it to be necessary, in a step S19, to determine "whether or not the decreased resistance-side failure determination-executing flag F_MILBOFFL assumes '1'." This step is required because, as described in paragraph [0069], "this flag F_MILBOFFL is set to "1" when it is judged that the output duty factor value DYOUTLM is in the failure region 2, and it is being determined whether or not a failure of the electromagnetic clutch 10 has occurred on the decreased resistance-side." As further explained here, "if the answer to the question of the step S19 is affirmative (Yes), it means that the output duty factor value DYOUTLM has been shifted from the failure region 2 to the failure region 1 by skipping the normal region, so that it is judged that the reliability of the failure determination is questioned, and the failure determination is cancelled to carry out the above steps S2 to S4." Accordingly the teachings

of paragraph [0069] are related to terminating the failure correction as being questionable and paragraph [0069] is of no relevance to the above-noted claimed subject matter.

On the other hand, paragraph [0070] is at least concerned with the result when the flag F_MILBOFFL is not set to "1" and the step 19 determination is negative. Under these conditions, the count of a failure determination timer "TMFSILBL" is checked to see "whether or not the count of the failure determination timer TMFSILBL is equal to or larger than a predetermined value #TMFSILB (corresponding to 3 seconds, for instance) thereof," so that it can be "finally determined that a failure has occurred on the increased resistance-side, since the above condition regarded as a state of occurrence of the failure has continued for a predetermined time period," as noted in paragraph [0070].

While at least a predetermined time period is determined, the only counting taught or suggested is the counting of time to determine if this time period has expired, not the claimed count of "each time when the current through the electrical load determined to be present by the current determining device drops below a predetermined low level within a predetermined period of time." Also, the claimed count of the specified current condition must occur "within" the "predetermined period of time," not after expiration of such a time period.

Finally, paragraph [0071] is not relevant because this paragraph is again concerned with a determination of a normal clutch coil that simply terminates the program.

Not only is the PTO interpretation that paragraphs [0005], [0009] – [0015], and [066] – [0071] teach the subject matter of base independent Claims 1 and 9 not supported by the actual content of these paragraphs, the suggestion in the second full paragraph at page 3 of the outstanding Action that paragraphs [0046] and [0058] – [0059] are somehow relevant to "a duty ratio determining device [or step] for determining whether a duty ratio related to the current is less than a predetermined threshold value; and a counter device [or step], which

accumulates the number of times the duty ratio determining device [or step] determines that the duty ratio is less than the predetermined threshold value.”

In this last regard, paragraph [0046] of Nishida ‘907 simply teaches providing “a current detection circuit 50 which detects a value ILOLM of actual current actually flowing through the coil 42 of each electromagnetic clutch 10.” Paragraph [0058] simply teaches failure determination counters CNT_TOE, CNT_TO2E must have counts that are “equal to ‘0,’ because if either of these counts are not “equal to ‘0,’ “this means that failure determination of the oil temperature sensor 24 is being carried out, so that the above steps S2 to S4 are carried out without carrying out the determination of a failure of the electromagnetic clutch 10, followed by terminating the program.” Thus, whatever else can be said as to counters CNT_TOE, CNT_TO2E, it cannot be said that they are “a counter device [or step], which accumulates the number of times the duty ratio determining device [or step] determines that the duty ratio is less than the predetermined threshold value” as incorrectly asserted at the above-noted paragraph page 3 of the outstanding Action.

To the extent that the PTO is to continue to suggest that Nishida ‘907 teaches or suggests any of the above noted limitations of independent Claims 1 and 9, it is called upon to indicate where in Nishida ‘907 that these teachings and/or suggestions can be found. See In re Rijckaert, 9 F. 3d 1531, 1533, 28 USPQ2d 1955, 1957 (Fed. Cir. 1993) (“When the PTO asserts that there is an explicit or implicit teaching or suggestion in the prior art, it must indicate where such a teaching or suggestion appears in the reference.”).

As it is believed to be clear from the above discussion that Nishida ‘907 cannot be said to teach each and every limitation of independent base Claims 1 and 9, the rejection of these claims as being anticipated by Nishida ‘907 is respectfully traversed.

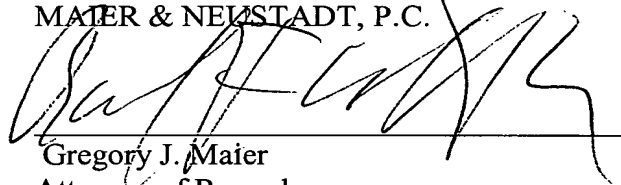
Moreover, as dependent Claims 2-8 all ultimately depend on parent Claim 1 and, thus, include all the limitations thereof and as dependent Claims 10-12 all ultimately depend on

parent Claim 9 and, thus, include all the limitations thereof, it is further believed to be clear the rejection of these dependent claims as being anticipated by Nishida '907 is also improper and traversed for the reasons noted above as to these parent claims.

As no other issues are believed to remain outstanding relative to this application, it is believed to be clear that this application is in condition for formal allowance and an early and favorable action to this effect is, therefore, respectfully requested.

Respectfully submitted,

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A handwritten signature in black ink, appearing to read 'Gregory J. Maier', is written over a horizontal line.

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